DARTMOUTH COLLEGE
MAY 7 1955
LIBRARY

The Chronicle
of the Early American Industries Association, Inc.
Volume VII October, 1954 Number 4

HAND PROCESSING WOOL IN AMERICA

By Janet MacFarlane and Virginia Parslow, New York State Historical Society

Sheep have always been raised principally for the weaver rather than the butcher, and the art of spinning the fiber has been known so long that we cannot tell the date of its beginning.

Inhabitants of the Massachusetts Bay Colony sent to England for sheep so that they could make woolen cloth without which it was difficult to subsist in New England during the cold winter months. By 1680 there were reported to be a number of sheep in the colonies, some of which may have been raised to accommodate the Rowley, Massachusetts weaving industry which began in 1643 with a migration from Yorkshire, one of the great woolen districts of England. In 1690 a town in Pennsylvania reported a community or "public flock of sheep," and in the same year taxes were being paid with wool in Rhode Island.

England did not want a wool industry in the colonies which would compete with her own foreign markets, so in 1699 an act forbidding American export of wool was imposed. The industry grew during and after the Revolution and in 1792 American exports to the West Indies included 12,000 sheep.

The most important source of high-grade wool is the Merino sheep. The breed supposedly was developed by the Romans who crossed sheep of the Tarrentine province with some from Asia Minor. The Spanish improved the breed and a few found their way to Germany, France and Australia. Merinos as wool bearers were first introduced into the United States in 1802 when Col. Humphreys, the Minister to Spain, sent some to his farm in Connecticut, and Robert Livingston Minister to Paris, sent some to his home on the Hudson River. Livingston tells of this experiment in his *Essay on Sheep* published in Trenton in 1810. He says of the Merinos of France. "I saw and admired her beautiful flocks; and the inquiries, I had the means of making of intelligent men from different parts of Europe, convinced me that instead of degenerating, they had improved in every region to which they had been transported. Knowing the United States to be peculiarly adapted to short wooled sheep, I was eager to put them in possession of this invaluable stock. . . . I hoped to attain my object by selecting two pair of the finest Merinos I could find, and sending them over under the care of one of my servants. . . . They arrived in safety in the spring of 1802, and were, I believe, the first couples ever imported into the United States."

New York household inventories of the 19th century list serges, broadcloths, blankets and woolen sheets. We know from clothing found in attic chests that heavy and lightweight woolen fabrics were woven or knitted, and used for warmth and comfort. Wool was an absorbent material which would char but not burn by fire, an important quality where open fireplaces were in use.

One of the questions most frequently asked of spinners refers to the quantity of fiber required to make a blanket or a coat. Records don't give us many facts, but one has come to hand—a report from Newport in 1769, when 30 lbs. of wool made into cloth finished to a cloak, a coat, a jacket and breeches. Five yards of woven woolen cloth was a good day's work for one man.

Sheep are classified as fine, medium and long wool breeds. The Merino breed which is the best in grading produces a very fine fiber. The Down sheep, which originated in England gives a medium wool. Long wools are lustrous, long in staple, and Lincoln or Leicester sheep are typical of this classification. The weight of a fleece ranges from about 6 to 22 lbs., dependent on the breed and local conditions. The fleece, when received, must be sorted. Today from 4 to 20 distinct grades may be obtained by proper sorting, but we can be certain that no householder of 1800 would take the time, let alone have enough fleece, to sort that rigidly.

Processing Wool from Fleece to Cloth

In the spring the fleece was sheared from the sheep. It came off like a blanket because the dirt and natural oils matted the surface of the wool. The fleece was laid flat and sorted, or separated into grades, the coarsest of which was used for rough goods such as horse blankets and carpets. The best grade of fiber was used for clothing and household fabrics.

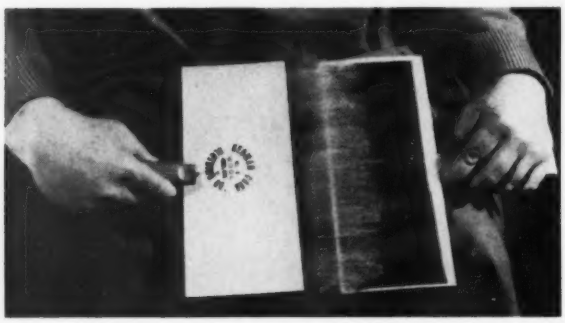
The processing of the wool began with the scouring. Around 1800 the usual scouring mixture was scalding water and urine. Today a chemical solvent is used. After rinsing and drying it was picked to remove foreign matter such as seeds and burrs, and to loosen up the locks of wool fiber.

Wooden hand cards with leather faces studded with metal hooks were used to pull the fibers straight. The wool was removed by reversing the loaded card and rolling the wool off the hooks. The roll was the full width of the card, and now ready for spinning.

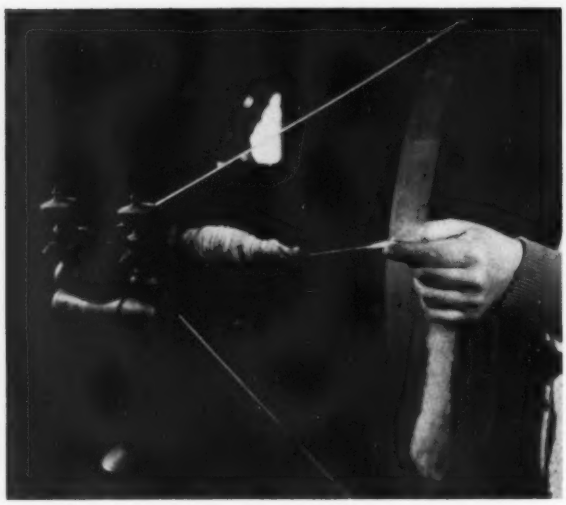
The combing of wool fibers was alternative to carding.

(Story Continued on Page 40)

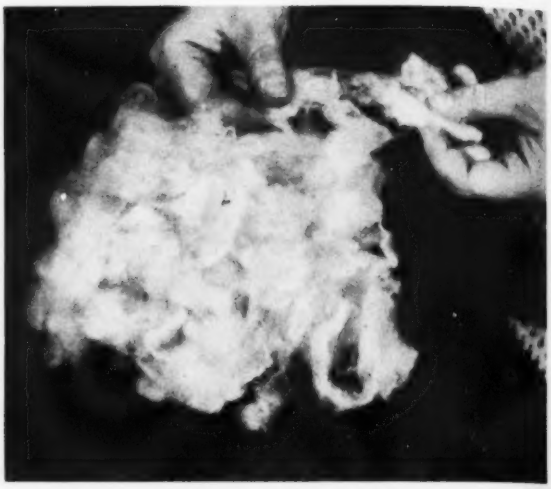
Fleece wool from a Shropshire sheep scoured ready for picking. The basket is completely hand-made Tash splint in bushel size.



Wool cards are used face to face, and the opposing hooks pull the fibers straight.



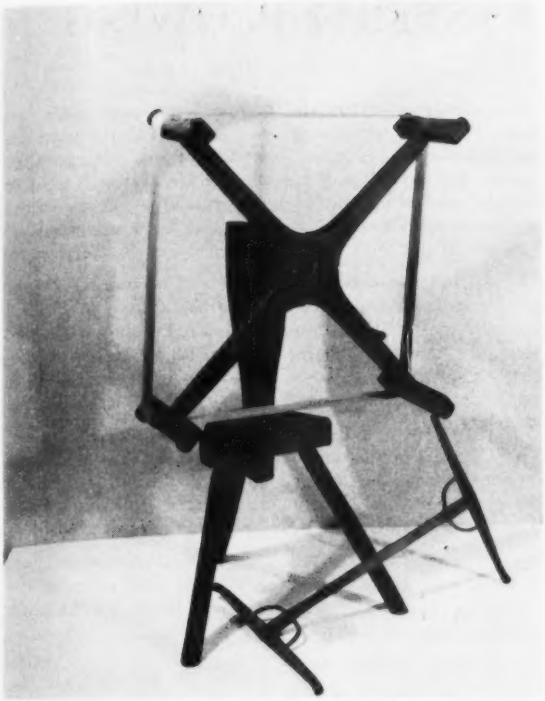
The spinner walks at the great wheel, three steps back to draw and twist, three steps forward to wind the finished yarn on the spindle.



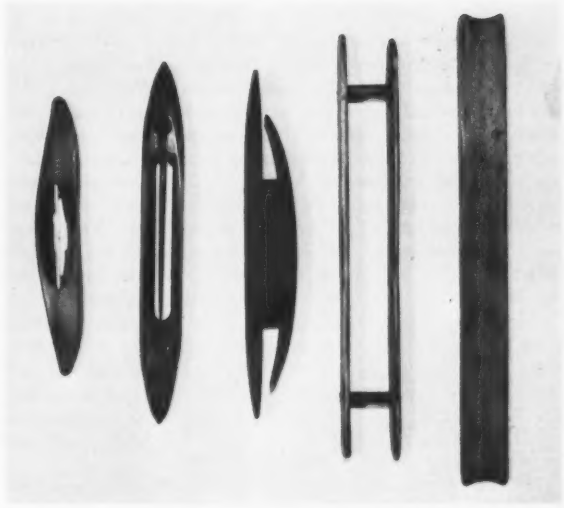
Picking wool for carding.

The wool is removed by reversing the loaded card and rolling the wool off the hooks. It is now ready for spinning.

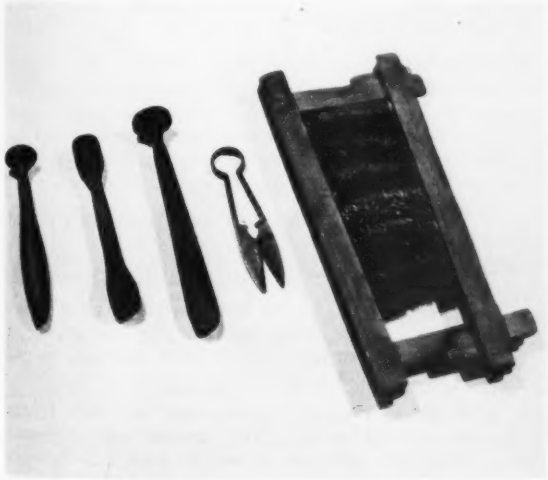
Two wool combs, which were always used in pairs. Each comb has two rows of teeth, one shorter than the other. This process was an alternative to carding and produced worsted yarn.



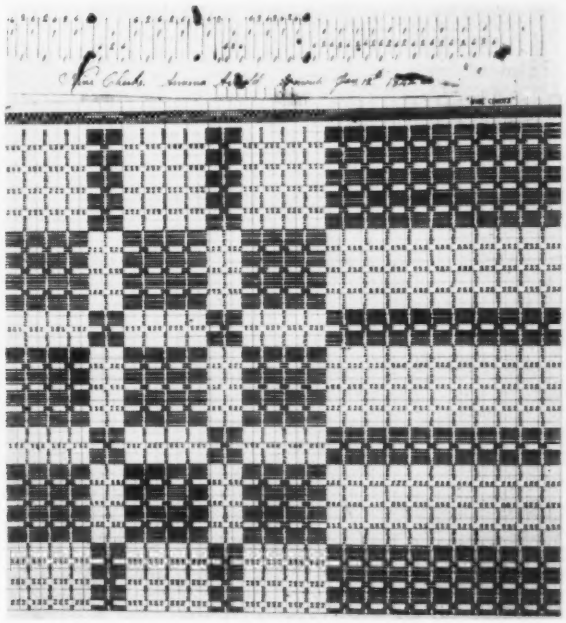
Clock reel and cross reel (niddy-noddy). The clock reel counts forty turns to a knot. The niddy-noddy is used with an elbow-wrist motion. Both forms spun yarn into skeins for washing and dyeing.



Shuttles for weaving wool. The weft yarn is wound on the shuttle and passed through the warp shed on the loom. In this picture are shown a stick shuttle, a blanket shuttle, a so-called Welsh shuttle, a boat shuttle, and a fly shuttle.



Wheelboys (or fingers) for controlling the speed of the wool spinning wheel. In the center is a weaver's tool for clipping threads. (Joseph Smith's book published in 1816 on the tools produced at Sheffield, England, pictures these as a "weavers pod.") On the right is a frame filled with teasels for raising the nap on woolen fabrics.



An original weaver's draft dated 1842 used in threading a loom for a coverlet. Above is a draft in modern notation and a graphic presentation of the pattern produced from the draft.

(Continued from Page 37)

The product of combing was a "sliver" which was a quantity of long fibers combed perfectly straight. The short fibers had been removed by the heated combs. When spun this produced worsted yarn. To use the combs one of a pair was fastened to a post. The two rows of metal teeth were insulated from the wooden handle by horn or bone plates.

The roll or sliver was held in the left hand and drawn out while the spinner walked backward turning the wheel with the right hand, thus revolving the spindle. This twisted the fiber into yarn. While walking forward the spinner wound the finished yarn on the spindle. In order to save her hands while turning the great wheel the spinner used an artificial finger called a wheelboy. This was a short wooden stick with a nob on one or both ends, turned or whittled.

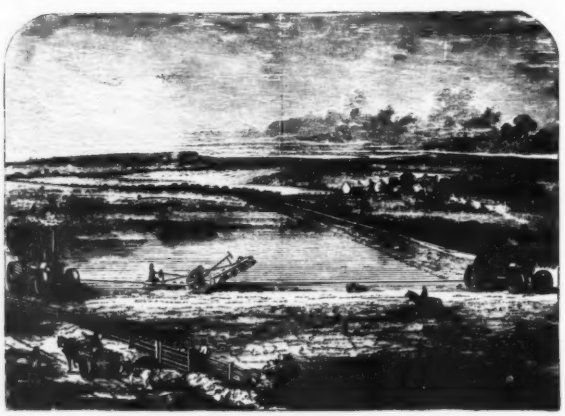
The spinning wheel was often equipped with an improved head patented in 1803 by Amos Miner of Marcellus, N. Y. By means of belted pulleys the speed of the head was tripled, and Miner claimed the output of woolen and tow yarn would be tripled as well.

The yarn was wound from the spindle of the spinning wheel onto a reel, to make it into a skein, a form in which it could easily be handled for washing and dyeing. The usual type of reel was termed a "clock" or "click" reel because it made a click at the end of forty revolutions, often supplemented by a wooden hand which turned and counted as the reel revolved. This accurate measurement was necessary for setting up the warp yarns for weaving. The cross reel, or niddy-noddy, was used by dipping or nodding cross bars with an elbow-wrist movement which gave the reel its name.

If yarn was to be dyed it was usually done at this time, although some was dyed in the fleece and some in the piece of finished fabric. From this step it went to the loom. The hand tools associated with hand looms were shuttles which carried the weft yarn through the warp shed. These were generally made of heavy hard wood except stick shuttles, which are usually pine or other lightweight wood. Fly shuttles were weighted with metal. In some shuttles the yarn was wound directly on the shuttle itself, while in others it was wound on a quill which was inserted in the center of the shuttle.

When the woolen fabric was woven it was washed and pressed. Sometimes these fabrics were brushed with teasels

(Continued on Page 42)



STEAM PLOWING

By Edwin C. Whittemore

In the last half of the 19th century, steam power was applied to many problems of man, and it is quite natural that the laborious farm chore of plowing was one. Strange to say, though McCormick and others in the United States were the brilliant leaders in most phases of agricultural invention and mechanization; it was Englishmen like Fowler, Howard and Smith who did most with harnessing steam to the plow.

All this was happening in a period of roughly 1865 to 1875 and by the latter date England had about eight hundred steam plows in use, tending almost three hundred thousand acres. In the 1867 journal of the Royal Agricultural Society, 135 farmers or stock companies were reported to be using steam cultivation, and this was early in the development period.

Cumbersome as the steam plowing systems were, they increased the acreage a group of men could handle, increased the yield per acre. They plowed better, quicker, cheaper. The essential units in a steam plowing set-up included:

A. The Engine. A gigantic heavy, complicated piece of machinery, resembling an early steam road roller. It had the steam plant, and a windlass wheel, swung parallel to the ground.

B. The Anchor. A wheeled unit, with windlass.

C. The Plow. A wheeled gang plow, with multiple units facing in each direction, and a steering mechanism operated by a rider.

D. The Rope. A continuous steel rope, at least twice the width of the field to be plowed.

E. The Rope Porters. Pulleys on wheeled bases to hold the rope off the ground.

Steam Plowing required a careful set-up of the units — the Engine on one side of the field, the Rope extending to and through the Plow to the other side of the field, passing through the Anchor, and wherever necessary, supported by the Rope Porters. Both Engine and Anchor moved up their respective sides of the field as the plowing progressed.

Actually there were three basic and different types of set-ups for steam plowing:

1. The Engine - Anchor. . . . as described above.
2. Two Engine. To get greater power with a direct pull no matter which way the plow was going, an Engine was set up at both sides of the field, instead of an Engine-Anchor team.
3. Stationary Engine. Under some conditions it was not possible to move the extremely heavy engine around the field, for reasons of mud, etc. In such cases the engine was made a stationary unit, and the continuous Rope ran a longer course through Snatch Blocks or corner pulleys.

The illustration shows the simple Two Engine set-up using but one Rope Porter. It is interesting to note that despite their size, the Engines rarely delivered over 15 horsepower.

Early American Industries

EARLY TRACTION PLOWS

Assembled by F. Hal Higgins

The term "traction plows" refers to a pulled implement as averse to a hoe, spade or other device which is pushed. Many early traction plows were pulled by human power as, indeed, they still are in some odd spots of the world. Some of the earliest of these plows are described in the following excerpts from *The Annual Report of the New York State Agricultural Society for 1867.*

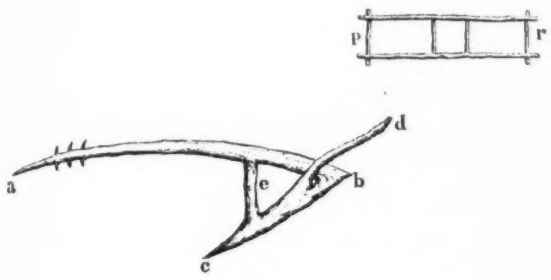


Figure 1

"Fig. 1 is copied from an ancient monument in Asia Minor, made wholly of the natural crooks of the branch of the tree, the only artificial contrivances being the brace *e*, which strengthens the share *c b*, and the pins in the fore part of the beam *a b*, and connect it with the central division of the yoke *p r*. It was with a plow like this that the servants of Job were 'plowing in the field when the Sabeans came upon them and drove them away.' It was with such as one that Ulysses plowed among the sands of the shore at Ithaca, when he feigned madness before the messengers of Agamemnon."

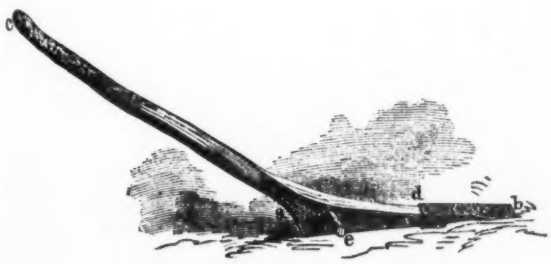


Figure 2

"The next improvement in the plow was to cover the point with iron. A very ancient implement of British husbandry, called the CASCHROM, is given in Fig. 2, which is used as a plow at this day in some parts of the outer Hebrides and in the Isle of Sky. Like the preceding examples of the implement from Asia Minor and Egypt, the wooden portion of it is in one single piece, and has evidently been selected on account of the natural crook which it had assumed in the tree, that permits the part *a d* to run nearly horizontally, while the upward curve of the handle, *a c*, rises to the shoulder of the plowman, and is allowed to rest upon it. When he desires to make it go deeper into the ground, he raises *c* on his shoulder; when it runs in too deeply, he presses with his foot upon the pin *e*. It is armed with an iron chisel at the point *b*, having a socket at the upper end, *d*, into which the fore end of the wooden part is firmly wedged."

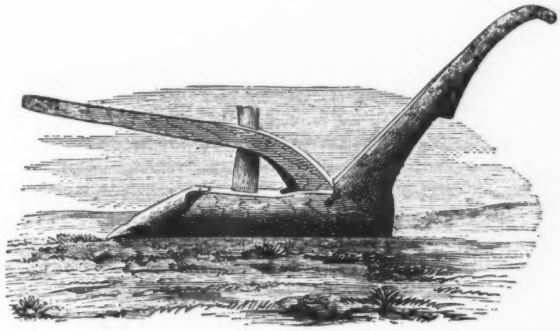
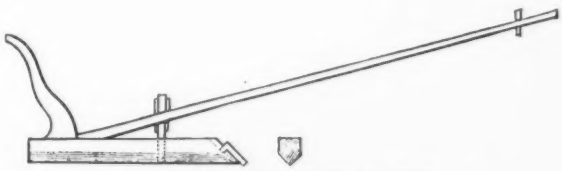


Figure 3

"Fig. 3 is an accurate representation of a plow now in our museum at Albany, such as is almost universally used in Mexico. Even in France, Spain and Italy the plows used are of the most awkward kind, incapable of doing good work, and excessively wasteful of power."

The plows described above should be compared with the plow described below (Fig. 4) which was in use in California in 1835. The following quotation is taken from *The Pacific Rural Press* for July 20, 1878 and is a reprint from *Forbes' California* written by Alexander Forbes in 1835 and published in London in 1839.



A CALIFORNIA PLOW IN 1835.

Figure 4

"The plow used, not only in California, but in all other parts of America inhabited by the Spanish race, is of great antiquity — and is also, I believe, still used in old Spain. It is composed of two principal pieces, the one which we shall call the main piece is formed out of a crooked branch of timber cut from the tree, of such a natural shape as to form the main piece, which constitutes of itself the sole and handle or stilt; it has only one handle and no mold board or other contrivance for turning over the furrow, and is therefore only capable of making a simple rut equal on both sides; a share is fitted to the point of the sole, but without any feather, and is the only iron in the whole construction of the plow. [A front view of this piece of iron is given in the little figure

EARLY TRACTION PLOWS

just in front of the plow. — Eds. Press.] The other piece is the beam, which is of great length, so as to reach the yoke of the oxen by which the plow is drawn; this beam is also formed of a natural piece of wood, cut from a tree of the necessary dimensions, and has no dressing except the taking off of the bark; it is inserted into the upper part of the main piece, and connected with it by a small upright piece of wood on which it slides, and is fixed by two wedges; by withdrawing those wedges the beam is elevated or lowered, and by this means the plow is regulated as to depth of furrow, or what plowmen call, giving more or less earth.

The long beam passes between the two oxen like the pole of a carriage or ox-wain, and no chain is required for drawing the plow; a pin is put through the point of the beam which passes before the yoke, and is fixed there by thongs of rawhide. The plowman goes at one side of the plow, holding the handle or stilt with his right hand, and managing the goad with his left. There are never more than two oxen used in these plows, and no driver is required; the plowman managing the plow and directing the oxen himself. The manner of yoking the oxen is not as is done in the north of Europe, by putting the yoke on the shoulders and fixing it by a wooden collar or bow, round the neck: the yoke is placed on the top of the head close behind the horns, tied firmly to their roots and to the forehead by thongs so that instead of drawing by the shoulders they draw by the roots of the horns and forehead. When oxen are so bound up they have no freedom to move their heads; they go with their noses turned up, and seem to be under great pain."

"From the construction of the plow as already described, it will be perceived, that there being no mold-board or feathered shear, the furrow cannot be cut up and turned over as with an English plow, a rut only being made; consequently the soil can only be broken by successively crossing and recrossing the field many times; and it is evident that however often crossed by a machine of this kind, the root weeds of any tenacity can never be cut, so that this mode of plowing must always be very imperfect; and although four or five crossings are often given, yet the soil is not sufficiently broken or the weeds eradicated."

WOOL PROCESSING

(Continued from Page 40)

which raised the nap which gave them a softer appearance and made them many times warmer.

A Few Definitions

Linsey-Woolsey is a union fabric composed of a linen warp and woolen weft. Today we find this fabric surviving in winter woolen thin blankets or sheets, although there are many historical references to linsey-woolsey being used for garments.

Worsted yarn is made from the long fibers of the wool with the short fibers removed. It makes smoother, harder yarn which makes a better wearing fabric.

The good wool from a small fleece gives about 6 lbs. of grease wool which when scoured and spun produces 4 lbs. of woolen yarn. This makes 3 yards of wide woolen cloth which is enough to make one woman's coat.

More on Plows

By Edwin C. Whittemore

The informative article on 'Ploughs' in the July *Chronicle* brings to mind several bits of information on that subject that might be of interest to those to whom they are news. For example:

. . . . Daniel Webster once wrote "When I have hold of the handles of my big plow in such a field, with four pair of cattle to pull it through, and hear the roots crack, and see the stumps all go under the furrow out of sight, and observe the clean mellowed surface of the plowed land, I feel more enthusiasm over my achievement than comes from my encounters in public life in Washington." Mr. Webster was referring to a plow which he had invented, a monstrous thing twelve feet long, with land-slide four feet long, iron-strapped mould-board of wood, and the beam twenty-eight inches from the ground. It took Mr. Webster and some six or eight assistants to hold it, and was designed for a field on the Webster farm that was thick with stout roots. All of this was around 1836 in Massachusetts.

. . . . During this same period, the inventiveness of Americans in ploughing devices had brought recognition even back in the countries from which these same Americans had learned their agriculture. In Holland around 1870 there was intense farming activity. Implements of Dutch origin were still crude to the extent that even a wheel-borne wood-and-steel framed harrow used natural brush for the harrowing-drag. Yet at this same time, the ploughs used by the Dutch farmers were to a great extent American.

. . . . A hidden but not insignificant phase of the development of power for ploughing is in the development of methods by which the strength of the beast of burden employed in the work could be applied to the plough. After man began using animals to help him in his tilling of the ground, the application of the animals power was lost because strange to say, the plough was attached to the animals tail! Not only did the poor horse or ox suffer, but little of his strength was actually transmitted to the plough. Thus the early farmer of the British Isles, even with an ox or other farm animal to help, had to use a hatchet or similar device to break the sod, roots, or other 'tough' matter in the way of the plough. The use of a 'pole' lashed to the tail of the animal was still active in England way up to 1800 though we find that early predecessors of the S. P. C. A. and more alert leaders had banned "Plowing by the taile" in some sections as far back as the first part of the 17th century.

. . . . It is to a Mr. F. F. Smith of Illinois that America owes much of the rapid advance in plowing methods right after the Civil War. Until Mr. Smith became interested in the problem, the metal ploughs were made of sheet steel, rolled into shape. No one knew how to temper them without warping them out of shape. Therefore they were soft, and in a gritty soil did not last long. Inspired by Englishmen's casting of steel bells, Mr. Smith tackled the problem of casting steel ploughs. The problem was in cooling the thin castings without cracking, and it took a long time to solve. The solution by Mr. Smith was an epochal mark in plough development.

The Chronicle

Early American

Industries Association, Inc.

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men, and other workers.

EDWARD DURELL, *President*
500 Dublin Avenue, Columbus, Ohio

LORING McMILLEN, *Vice-President*
Staten Island Historical Society
Richmond, Staten Island, New York

JAMES A. KEILLOR, *Vice-President*
3 Ridgeway Ave., White Plains, N. Y.

GEORGE M. SIMMONS, *Vice-President*
Farmingdale, Long Island, New York

MISS JANET R. MACFARLANE, *Secretary*
Farmers' Museum
Cooperstown, New York

MRS. FRANK D. PEIRCE, *Treasurer*
51 Paxton Street, Leicester, Mass.

M. W. THOMAS, JR., W. D. GEIGER
Editors of The Chronicle
Williamsburg, Virginia

Editorial Advisory Board

MISS JANET R. MacFARLANE ..... Cooperstown, N. Y.
LORING McMILLEN ... Richmond, Staten Island, N. Y.
LAWRENCE B. ROMAINE ..... Middleboro, Mass.
CLIFFORD K. SHIPTON .. American Antiquarian Society, Worcester, Mass

Communications regarding the contents of The Chronicle should be addressed to the Editor; regarding back numbers to Loring McMillen; suggestions for members to any of the Officers; all other matters to the President. Addresses as here given.

DUES

The annual dues are payable January 1st, and are as follows. Active members $5.00; Helpful members, $7.50; Encouraging members, $10.00; Enthusiastic members, $15.00, and Delighted members, $25.00. There is no distinction between classes, except the amount of dues, but The Chronicle cannot be financed unless a considerable number of the members pay more than $5.00. Each member is expected to voluntarily place himself in the class which represents the amount he is willing to contribute to the support of the Association for the current year. Life membership costs $50.00. The Chronicle is sent to all members without additional charge.

Printed on the Press of the *Virginia Gazette, Founded 1736.*

SECRETARIES REPORT

BY JANET MACFARLANE

The Fall meeting of the Early American Industries Association, Inc., was held in Cooperstown, New York, October 1, 2 and 3. The Hotel Otesaga was hotel headquarters and The Farmers' Museum and Fenimore House staff arranged the program.

On Friday morning during registration at Fenimore House, museum guides pointed out paintings and prints which show early tools in use. Horse-drawn vehicles left Fenimore House for trips to the Elk Street Carriage House and Stables of Mr. F. Ambrose Clark. At noon the Board of Directors met, and the membership was greeted by Dr. Louis C. Jones, Director of the New York State Historical Association. On Friday afternoon there were special demonstrations at The Farmers' Museum when E. A. I. A. members were invited to help churn butter, flail oats, ripple flax and shrink an iron tire on a wooden wheel. Dinner on Friday evening was a chicken barbecue held at Bump Tavern on The Farmers' Museum property.

Saturday morning a Prize Shoot and demonstration of muzzle loading rifles were held at the southern end of The Farmers' Museum grounds, while other members argued about the "What's Its" which were on display in the office building. Saturday afternoon a group of men went to Risley's gunshop, and at Fenimore House a demonstration and explanation of wool processing tools was given followed by a film on silversmithing. Before dinner on Saturday evening members were guests of the New York Historical Association at cocktails. At dinner prizes were presented to the winners of the Prize Shoot and "What's It" contest. Members' meeting was followed by an illustrated talk, "The Cart Behind the Horse" by Richard M. Gipson who assembled the vehicle collection for the Carriage House Museum at Stony Brook, L. I. At the members' meeting regional meetings were discussed and a report read of a meeting September 21st held at the home of Mr. and Mrs. James A. Keillor on Long Island. The Keillor collection of farm tools, household utensils and lighting devices was the focal point of the meeting. Mr. Keillor was appointed chairman of a committee to bring to the next meeting a simple outline for future regional meetings. Announcement was made that the Directors had voted to accept the invitation of Old Sturbridge Village in Massachusetts for the last week end in June, 1955. Sidney Stewart was appointed chairman to handle the auction at that meeting. It was announced that the Directors had decided to try to raise money to pay for articles to be published in *The Chronicle*. Robert Hill, membership chairman, announced new membership committee plans which will spread the interest geographically. Directors of the E. A. I. A. were charged with the responsibility of making new members welcome at future meetings.

Winner of the Prize Shoot was Robert Hill. In the "What's It" contest the woman's prize was won by Myra Keillor; Stanley Howe and Edward Durell were the men winners.

The Chronicle

EARLY PENCILS

By G. A. R. Goyle

This article was taken from the July, 1935, *Chronicle*

The old inventory of 1677 in the Essex County Probate Records, quoted in Ancient Carpenters' Tools by H. C. Mercer (Doylestown, Pa., 1929) as an early reference to lead pencils, listing "27 pensills at 8d. p. doz. - 1s. 6d." refers more likely to painting brushes. W. Salmon, in his *Polygraphice or the Arts of Drawing, Engraving, etc.*" (8th Edition, Londong, 1701), gives detailed information on "The Manual Instruments" for Drawing, Limning, &c. To him, pencils, as such, are always made "of hair, and are of several bignesses, From a Pin, to the Bigness of a Finger, and called by several Names, as Duck's quill fitch'd, and pointed; Goose quill fitch'd and pointed; Swan's quill fitch'd and pointed; Jewelling Pencils; Brush Pencils; some in quills; some in Tin Cases and some in Sticks." W. Salmon was acquainted also with lead pencils and distinguishes "Black and Red Lead Pencils." No details are given beyond the statement that "They are made either of black or red Lead, shaved to a sharp point."

The word pencil, to denote a brush, has persisted until the early part of the 19th century. In *The Book of Trades* (London, 1824), among the implements of the painter, it is said that "The Pencils or Brushes are made of Camel's Hair, Badger's Hair, or Hog's Bristles." The word pencil is derived from the Latin Penicillus—a paint brush, the same as the German word Pinsel which, in Germany, is the word for paint brush to this day.

The dictionary accounts of the early history of lead pencils need a revision, and we have to go back for better information to the works of Conrad Gessner, who gives the first account of plumbago in his *De omni rerum fossilium genere, gemmis, lapidibus, metallis &c.*" (Zurich, 1555). In connection with this mineral, Gessner describes the wood-encased lead pencil, and illustrates it with a woodcut. A more detailed description of plumbago appears in *Caesalpini De Metallicis Libri* (Rome, 1596). There it is called a lead-colored, shiny and slippery stone, as if covered with oil, from which sharply pointed pencils are made for the use of artists. Another Italian writer, Ferrand Imperato, calls this mineral *graga piombino* in his Natural History (Naples, 1599), and remarks that it is preferable, for drawing, to pen and ink, being visible on black as well as on white ground, that it can be left standing or wiped off *ad libitum*, and that it is possible to write or trace over such lines with a pen. Gessner's woodcut of a lead pencil is reproduced on a larger scale in Aldrovandi's *Museum Metallicum* (Bologna, 1648). These data should suffice to refute the current notion that lead pencils were first made, in 1664, of graphite from the Borrowdale mines in England. In fact, the account Robinson gives, in his *Natural History of Westmoreland and Cumberland* (London, 1709), of plumbago mined near Keswik, does not mention its use for lead pencils, but shows that it was mostly exported to Holland, where it was used for dyeing, as the crafty Dutch traders told the unsuspecting producers, and we may deduce from this that, at the Borrowdale mines, nobody knew then that they were furnishing to the Dutch the very quintessence and marrow of the lead pencils. In the curious book called *Fleta Minor, the Laws of Art and Nature* by J. Pettus (1683), under the heading "Lead," mention is made of lead-pencils set into fir or cedar wood. The title of this work, *Fleta Minor*, is remindful of the anonymous Latin book of English Law written about 1290, probably in the Fleet Prison.

To complicate matters, the *New International Encyclopedia* (New York 1926) asserts that "the manufacture of graphite pencils in England began in 1564, when a valuable graphite mine was discovered at Borrowdale, Cumberland." This must be a misprint as the usual date assigned to this event is 1664. Of more national interest is a note from the same source: "The first manufacturer of black lead pencils in the United States was William Monroe, of Concord, Mass., who in 1812, invented a process by which he pulverized and mixed the material and incased it in cedar holders. He was very successful in selling his product and continued the business for about eighteen months, when he was obliged to give it up, on account of the difficulty of obtaining the raw materials. Later he resumed the manufacture of pencils, and continued it on a small scale for many years."

In German, the equivalent of the scratch-awl, is *Reissahle*. *Reissen*, in this sense, means making lines. *Reisse-blei*, although now colloquially understood to mean graphite, was a square stick of lead, used by the carpenters for making lines on wood. The English equivalent is plummet. The *Universal Cyclopedia* (New York, 1905) has the following about it: "Even as late as the 19th century, pencils made of soft lead hammered into convenient forms were used and known as plummets." A definition in the *New Standard Dictionary* (New York, 1919) confirms it by calling a plummet "a pencil of solid metallic lead, as distinguished from a graphite pencil, now little used."

Another source of information about the early use of lead pencils may be the study of old drawings and manuscripts. In the Catalogue of Original Drawings by Old and Modern Masters from the R. Ederheimer Collection, The Anderson Galleries (New York, 1919), a modern critical sales catalogue of old drawings, I saw listed a few pencil drawings, the oldest being by Lambert Zutman (Suabius) 1510-1567 A. D.

Finally, while concerned with the history of lead pencils, we should add a word about erasers. Salmon (*Polygraphice*, London, 1701) tells us that artists made their rought sketches ("schizzo" as he calls them) with charcoal of sallow-wood. Inaccuracies could be rubbed out with the feathers of a duck's wing, or with a bit of bread. Towards the end of the 18th century, India rubber came to be used for erasing pencil lines. It was then costly; a cube, with sides one-half inch long, sold for 3 shillings. Rough blotting paper or bits of bread preceded the use of the India rubber.

In conclusion it may be stated that the beginning of our modern lead pencils, with varying degrees of hardness, dates from the invention of Jacques Conte (French patent of 3rd January, 1795), who made a mixture of powdered graphite and clay, which could be pressed into thin uniform rods to be encased in wood. His process revolutionized the industry, and supplanted the wasteful process of cutting the rods from solid native graphite.

Early American Industries

MAIL ORDER, COLONIAL STYLE

By Raymond Townsend

Many of us have pored over the catalogues of Sears & Roebuck and Montgomery Ward, ordered their various items, sent in drawings of our feet for a pair of shoes, body measurements for a suit, measured around our head for a hat, and then waited anxiously for the postman's delivery with anticipation of donning our new purchases. We may feel that these two mail-order houses were among the first to originate this type of purchasing, but ordering my mail was quite familiar to our colonial ancestor. In the colony of Virginia he could order his most socially important article of dress — his wig — in this manner!

It may have been Mr. Thomas Clendinning of Glasgow who started this new way of purchasing or perhaps at least in the colony of Virginia. His advertisement in the *Virginia Gazette* of 1745 expressed his procedure of ordering:

"THOMAS CLENDINNING
Wig-Maker, in *Glasgow*,

Undertakes to furnish all the GENTLEMEN in *Virginia*, that are pleased to favour him with their Commands, in WIGS of all Sorts and Fashions, at the Prices under-mentioned, according to the Goodness and Size; in which Particular he promises to restrict himself to the lowest Rates he charges any of his Customers living in *Glasgow*.

He is always possess'd of a large Stock of the best HAIRS of all Colours; and, as he proposes to keep the best Workmen in his Employ, and to regulate his Fashions by the present Mode at *LONDON*, he makes no Doubt of giving Satisfaction both in the Goodness and the Cheapness of his WORK, which will be considerably under the London Prices.

Fair Bob Wigs, from 30sh. to 3 L.

Grizled Brigadier Wigs and Roses, from 14 sh. to 30 sh.

Grizled Spencer Wigs and Roses, from 14 sh. to 25 sh.

Grizled Bobs, Long and Short, from 14 sh. to 30 sh.

Brown Brigadier and Spencer Wigs, from 10 sh. 6d. to 16 sh. 6 d.

Black Bobbs and Black Naturals, from 8 sh. to 12 sh.

Pale and Brown Bobs, of the best Kinds from 8 sh. to 12 sh.

And all Sorts for BOYS.

The Method he would propose to take in answering his Commissions, is as follows:

That the Gentlemen forward their Orders to himself, or any of their Friends in *Glasgow*, expressing the Colour, Fashion of the Wigs, and Dimensions of the Caul, and Price about which they would have the Wigs made up.

"Or, if they lodge a Memorandum, as above-mentioned, at the *Raleigh* Tavern in *Williamsburg*, several Copies of the same will be forwarded to him by different Opportunities, and he will immediately, upon Receipt thereof, have the Wigs wrought up agreeable to the Directors, and sent to Virginia by the first Ship that offers, directed to the same House, where they may be called for.

"Upon delivery of the Wigs, the first-cost Price to be paid at the current Exchange, together with the common Premium of Insurance, and Six Pence a-Pound, as Commission, for the Trouble of receiving and delivering the Wigs, and remitting the Money from *Virginia*.

"He will charge nothing for the Boxes nor Freight: And, if the Wigs do not please at Sight, the Gentlemen are not bound to take them.

"Each Gentleman's name shall be mark'd upon the Wigs; and along with each Box there will be sent an Invoice of the Whole, distinguishing the several Commissions, and including Insurance.

"And, that the Gentlemen may be the better satisfied that Justice is done them in the Prices, &c., the Wigs will be examined, and the Invoices attested by Mr. RICHARD OSWALD, Junior, Merchant in *Glasgow*,"

At *Glasgow* the 25th February, 1744-5.

THOMAS CLENDINNING."

(Virginia Gazette. Parks — June 6, 1745)

Note how similar this is to our present method; he was to choose the price, style and color and send in his measurement and upon arrival of his newly ordered wig, pay the cost, insurance and commission ("Six Pence a-Pound"; was this in lieu of our present 10% carrying charge?) to the one designated to deliver it. A sort of C. O. D. arrangement!

We have no record of how well this new method appealed to the Gentlemen of Virginia. Evidently from the advertisements, following Mr. Clendinning's, of the local Wig-makers offering the same "'Letters and Commissions" the idea must have been received favorably.

A month after Mr. Clendinning's advertisement Mr. Alexander Finnie, Wig-maker of Williamsburg, was the first to advertise local mail-order service.

"Just imported in the Ship *Restoration*, Capt. John Wilcox, from London, by the Subscriber, next Door to Mr. Crosbie's, Merchant, in *Williamsburg*.

A Choice Parcel of Hairs, and other Materials, for making Wigs, prepar'd by the best Hands in *London*. Gentlemen or others may depend on being faithfully serv'd after the best Manner, and newest Fashions. Commissions and Letters will be carefully answer'd, by their very humble Servant,

Alexander Finnie."

(Virginia Gazette. Parks — June 27 to July 4, 1745)

Benjamin Catton, wig-maker of Yorktown, soon followed with his advertisement:

"Just Imported, by the Subscriber, in the ship *John*, Capt. Seabrook, from *LONDON*,

A Large Quantity of choice Hairs, prepared by the best Hands, and other Material for Making of Wigs. He has also, at a great Expence, procured Three of the best Workmen that could be got, in *London*, for carrying on the said Business: so that he is now able to serve his former Customers, and other Gentlemen, in the best Manner, with Wigs of the newest Fashions; and all Gentlemen that are pleas'd to give or send their Orders, may depend on being faithfully and speedily serv'd, by

Their humble Servant,
Benjamin Catton."

(Virginia Gazette. Parks — Sept. 26, 1745)

The following year Richard Gamble, of Williamsburg, advertised:

"Just Imported in the *Albemarle*, Capt. Grayson, from *London*, by the Subscriber, in *Williamsburg*, A Choice Parcel of Hairs and other Materials for making Wigs,

prepared by the best Hands in *London*. Gentlemen or others may depend on being faithfully and speedily serv'd after the best Manner. Commissions and Letters will be carefully answered, by their humble Servant,

Richard Gamble."

(Virginia Gazette. Parks — May 22, 1746)

There is evidence that the idea spread. Thomas Wills, Peruke-maker of Baltimore advertised in 1757 his intention of answering letters:

"THOMAS WILLS,
BARBER and PERUKE-MAKER,
from *LONDON*,

At his Shop near the Inspection-House in *BALTIMORE-TOWN*, UNDERTAKES to serve all Gentlemen, who shall be pleased to favor him with their Employ, in WIGS of all Kinds and Fashions, as understood: In which Particular he promises they shall be as good as from *London*, as he has now purchased a large Stock of English Hairs of all Colours, and as he proposes to kept the best Workmen in his Employ, and to regulate his Fashions by the Mode from *London*: He makes no Doubt of giving entire Satisfaction, both in the Goodness and Cheapness of his Work, which will be considerable under *London* Prices: — Full Dress Wigs of all Kinds from 1 L. 10s. to 5 L. Currency. Cut Bobs and Ques of all Kinds from 1 L. 10s. to 5L. Currency.

The Method he proposes to take in answering his Commissions is, That the Gentlemen forward their Orders to himself, or any of their Friends living in *Baltimore-Town*, expressing the Colour and Fashion of the Wig, and Demensions of the Caul, and the Price which, they would have them, and he will immediately on Receipt thereof, have the Wigs, the first Cost and other Charges to be paid. And that the Gentlemen may be the better satisfied that Justice is done them in the Prices, if they don't please at Sight, they are not bound to take them from

Their most humble Servant,
THOMAS WILLS.

N. B. The Measure to be taken from the Peak to the Neck, and round the Head; either sent, or the Inches mentioned."

(Maryland Gazette. June 9, 1757)

Note how similar this advertisement is to Mr. Clendinnings. The advertisement of Thomas Hewitt, peruke-maker from Williamsburg, who moved to Annapolis in 1762 reveals that the practice of "mail-order" wigs was well accepted. He advertised that he had ready-made wigs for those who could not receive them by Post:

"THOMAS HEWITT,
Peruke maker, *Annapolis*,

Having lately imported an Assortment of the very best Hairs, and other Materials, for carrying on his Business, takes this Method to acquaint those Gentlemen who reside in the remote Parts of the Province, where they cannot be supplied with Wigs by Post, or other Convenient Opportunities, that for the readier furnishing of them, when they come to *Annapolis*, he has now ready made, and intends to keep constantly by him, all Sorts of Wigs, made in the newest and most approved Fashions, from the Clergymen and Counsellors full Dress Wigs; down to the common cut Bob; also French Paste,

(Continued on Page 48)

NEW ENGLAND HOME 1831

By Lawrence B. Romaine

I remember back in 1935 Homer Eaton Keyes, then Editor of *Antiques*, told me that there was no more tiresome reading in the world than a list of articles and prices. I wonder. Can you stand another on top of the list of 1,830 carpenter's tools? It is possible that Mr. Keyes was thinking of the general run of human, and that our membership is unique in preferring history to "who done its?"

Another old calf bound ledger with delightful hand tooled edges sits upon my desk and leers at me. If I sell it, as I should in the course of business as I have chosen it, it may be buried in an institution for the research that may not come until those of us who are now interested, are six feet under, and care nothing about the price of a front door latch in New England in 1831. Frankly I doubt if even I would bother to try to break through the flimsiest coffin to exclaim at the price of fire frames at this date (though I have long hunted for this information). And so I shall throw these notes at the door of the *Chronicle* and see what happens — dropping the daily mail, our next catalogue and the thousand and one other things that at the moment lay siege to Weathercock House.

As so often happens, this veteran piece of calf contains everything but the owner's name — the one chap in whom we are most interested. The entries indicate that his house, factory and shop were in or near Enfield or Greenfield, Mass. The schedules of work, neatly laid out by days and weeks for each helper, are clear and complete for 1831 and 1832. There is no question but that he (and his employees) wove textiles — and the crime is that there is no mention of patterns, designs etc. The schedule of work are entered in individual accounts of payments for hours and days and weeks and months of "breaking," "tentering," "satinetts," "finishing damaged satinetts," "finishing" yardage in quantity and various other fabrics. The payments for work record such names as Nelson Roberts, Elijah Gunn, Daniel Knapp, Experience Hosmer, Emaline Carter, Eunive Ames and Bathsheba Purington. Sales are recorded mostly to "The Factory Co.", as "to finishing 30,099 3/4 yds. at 1 1/8 cents per yr." I imagine the many smaller accounts are for the many country stores in the neighborhood.

It is difficult, as usual, to figure out just what part of this man's life we are considering. There is no way of knowing how many ledgers he has already penned, how long his looms have been working and whether this house of which he writes was built (like most of us even today) after he had established his business. We shall have to take it as it was written, and when, for the research necessary to answer this question might never end. That the house was built in 1831-1832 is indicated by an entry of a payment to the Swift River Manufacturing Co., and not by an actual date heading the Expenses! Yet every other entry is carefully dated.

Under date of Nov. 9th to Jan. 7th (1831-1832) there is a payment to one Thomas Jones for "36 3/4 days work in finishing the shop began the 4th Nov. & ended the 24 Dec. at one dollar a day & boarded. — $36.75." Shop??? A shop to house the looms? Where have they been operating, or was this the country store which he also kept? Country store?? Yes, indeed. While the looms were weaving and other Yankee hands were busy mending and creating, our

Early American Industries

friend also kept a store from which he sold "Small accounts not in the Ledger": — butter, whips, powder, satinets, sieves, shoes, shawls, hats, calico, towels, mittens, feathers, brass, tea, books, gimblets (?), clover seeds, flour, sheeting, "question books" (??), spelling books and even potatoes!

There is a long account of "wool bought for Thomas Jones" at Enfield, Mass., miles and miles of travel such as "to a horse 75 miles — 4.50" and many entries of kettles of soap. As is always the case with these old accounts, there are facts that at the time they were written needed no explanation — but, today in 1953 require a good deal of thought, and often, speculative imaginings. For instance, in this ledger it is quite impossible to say whether the writer is paying Thomas Jones for "making 4 kettles of soap" or whether Thomas Jones has paid HIM for the work. However, you will have to rely on my guesswork for this, much as I hate to take the responsibility, for, if you doubt me now, I might as well throw the whole thing in the basket and quit!

The most exhaustive work on this section of New England, compiled by one of our members, Donald W. Howe of Ware, Mass., does not mention any of the names in the ledger in his industrial account of Enfield. I am convinced that the accounts were kept in this area and it is of course possible that our accountant operated his looms and store on an old country road not exactly in either Enfield or Greenfield. Perhaps he had no Post Office address. Mr. Howe covers Enfield, Greenwich, Dana, Prescott, Millington, New Salem and Pelham and his chapters on "industries" are in detail. ("Quabbin — The Lost Valley" is, incidentally, the only record of the industries of these communities, now under many feet of water to supply Boston's ever growing population. I recommend it highly.) However, the building of a homestead in New England in 1831 at a total cost of $893.32 is my text, and I hope the "main event" — that I can not set it gently down in the right village should not detract too much from the boredom of reading another list!

"Expenses for Building House

Pine stuff for outside door	$1.75
285 ft. ½ inch Boards 400 c	1.14
Bill of lumber by J. E. Cathcart	18.17
for Shingles	4.73
for hill digger	.50
100 lbs. — 10* Nails 7½	7.50
4½ " do 7½	.30
3000 Shingles 2$.-	6.00
6 lbs. Nails 7½	.45
Cash paid Sam'l	6.00
115 lbs. Nails 7½	9.62
Frank Naramore 1 man & oxen ½ day	1.00
670 feet Spruce clapboards	6.70
400 Spruce boards $10.	4.00
for underpinning stone	7.00
20 Lime 55c	11.00
11 windows 3½ light	9.24
Pine boards	27.00
cutting & setting stone	14.12
30 lbs. Nails 7½	2.25
1 M Brads	.18
3 Fire Frames —	24.00
3 sheets sand paper	.06
Franklin Naramore laying wall — & his man — 2 days.	2.42
Franklin Naramore Oxen one day	.50
Theodore Parsons and David Carpenter one day	1.58
Daniel Hall	.42
Franklin Nar'e Oxen 1/4 day.	.13
3728 shingles $2	7.46
1500 shingles $2.	3.00
37 lbs. nails- 7½	2.75
22 lbs. nails 7½	1.65
288 feet lath 40c	1.15
1 day work by Captain Rice-	.83
1½ lbs. nails 7½	.12
40 lbs. nails 7½	3.00
2 sheets sand paper	.04
for lumber, stone, brick & labor-	100.59
6 sheets sand paper & 75 Lime	45.12
126 feet Lath 40c per —	.50
17½ lbs. nails 7½	1.33
½ lb. chalk — 6c	.03
8 lbs. nails 7½	.60
1 Door latch, Butts screws etc. etc.-	.69
Latch, Butts, 10 doz. screws-	.91
8 lbs. nails and 6 sheets sand Paper-	.72
2 doz. screws-	.12
for lumber-	1.60
4 lbs. nails 7½	.30
4 pts. oil- 7/-	.59
2 qts. oil	.59
1 gal. & 2 qts. oil 7/-	1.75
1 file 44c	.44
1 paper of brads	.25
½ dozen door handles .25	1.50
14 lbs of lead 1c	1.54
½ lb. Umber — 16c & ½ do Lead- 9c	.14
9 rolls paper at 44c	3.60
1 roll paper —	.90
4418 feet Lath- 40c	17.67
Various bills for labor: — voz: — Mr. Blood —	$29.50
Mr. Packard —	12.50
Eben. White —	28.12
Em. Cathcart —	3.50
Isaac Wing —	21.33
Len. Packard —	41.97
Various others — transportation, hauling, etc. -	21.81
Total January, 1832.	$893.32"

As I check back on the above, trying to make words say what is'nt there in ink, I wonder why he says "stuff" in the first entry.. I wonder how long the 285 ft. of ½ inch boards in the second entry was seasoned and who seasoned them for $1.14. I ask you, one and all, what was a "hill digger?" Has anyone ever seen a 3½ light window. I look at the fire frame in our front room, now embellishing the original opening ca. 1740, and wonder if it cost the James family who lived here about 1830 $8.00 — or is it fancier than the one in the ledger, and was it $11.38? I look at our poor old barn roof and wish that I might take a horse and run down to the village and bring home 3000 shingles for $6.00. But also, being practical, I look at the front door latch and realize that with the butterfly strap hinges I wouldn't think of selling them for .60c — nor the dozens of smaller latches in the shop for .25c each! There are two sides to every equation. I wonder what that wall paper for .44c a roll might have looked like in 1831.

If Mr. Keyes was right, and you yawn (as I have oft times warned you), drop me a line.

REGIONAL MEETING

By Miner J. Cooper

On Tuesday, September 21st, 1954 approximately thirty members and guests of the Early American Industries Association assembled at "Hillcrest", Wading River, L. I., "Century Farm" home of Mr. and Mrs. James A. Keillor.

The farm, having been in continuous possession and operation by Mrs. Keillor's family for more than one hundred years, is now operated by Colin, one of the Keillor's sons. The family was inducted into the Order of Century Farmers a few years ago. This is an honorary organization, the membership qualifications being not only to have had a farm in continuous possession and operation by the same family but also that the family now owning the farm must have demonstrated qualities of integrity and leadership.

Members began to arrive late in the morning and were allowed to roam at will through the house, viewing the furnishings and miscellaneous collections.

A delightful buffet luncheon was served out of doors in the landscaped, basement ruins of an old barn. The Clam Pie was a "taste treat" to be long remembered.

Following the luncheon, Mr. Keillor greeted the guests briefly, concluding with the suggestion that more of these meetings be held. Whereupon, all present agreed to sign a petition, to be directed to the Association, that a regional organization be formed, with tentative headquarters at the Old Museum Village of Smiths Clove, Monroe, N. Y.

Guests were then conducted to the barn where a remarkable assembly of collectibles are housed. The Keillors can be justly proud of their project. The collection is well displayed, well lighted and covers a wide range of objects including early farm tools, household tools and utensils, early lighting devices and miscellaneous items. There are over one hundred apple paring machines and devices. Some of the things are "truly drooly."

Each guest, on leaving, was presented with a gift of Long Island potatoes raised on the Keillor farm.

I am sure we all had a wonderful time and sincerely thank the Keillors for their hospitality and the opportunity of seeing and handling so many excellent examples of days gone by.

HELP WANTED

The Early American Industries Association has been contacted by Mr. Walter S. Dunn, Curator, Industrial History, Detroit Historical Museum, Detroit 2, Michigan, for any assistance the Association can give his museum in one of their new projects.

The Detroit Historical Museum is beginning work on a reconstructed blacksmith shop as part of its street of 1840. Mr. Dunn is particularly interested in information on interior views of shops of this period and photographs and descriptions of tools used in such an establishment. The shop must fit the period 1840-1850 and is to exemplify a blacksmithing operation in the city of Detroit whose proprietor also manufactured rifles.

Any information that members may care to pass on to Mr. Dunn should be sent directly to him in Detroit as listed above.

MAIL ORDER, COLONIAL STYLE

(Continued from Page 46)

and Scratch Cue Wigs, &c. &c. Gentlemen that please to favour him with their Custom, may depend on having their Wigs well made, and of the best Hairs; and all his ready made Work shall be as neatly and faithfully executed, as if each had been made for his best and most particular Customer."

(Maryland Gazette. August 23, 1770)

No doubt, our present day mail-order houses sometimes have trouble in collecting for merchandise mailed out and so did Mr. Hewitt, who in 1777 advertised his intentions of not carrying on his business any longer and stated:

". . . Those Gentlemen who have his promise for Wigs may expect them as soon as he possibly can get them done; and as there are several Gentlemen in the out countries who have omited for a considerable length of Time to send the Money for Wigs sent them, he begs the favour of them to take the first convenient Opportunity of sending it . . .

Thomas Hewitt."

(Maryland Gazette, April 10, 1777)

Quite a contrast to our present day mail-order catalogues! But the method is basically the same. What didn't our ancestors think of?

NEW MEMBERS

CALIFORNIA

San Gabriel: Mr. Gifford Smith, 101 W. Las Tunas

ILLINOIS

Champaigne: Mr. and Mrs. Paul A. Peach, 201, South Draper

MASSACHUSETTS

Georgetown: Dr. Harold H. Wagner, 18 Andover Street
Marshfields Mr. and Mrs. Ernest C. Melville, P. O. Box 40
Medford 55: Mr. Melville T. Nichols, 353 Lawrence Road
Wellesley Hills 82: Miss Peggy Gren, 16 Livermore Road

MISSOURI

St. Louis 12: Missouri Historical Society

NEW YORK

Brockport: Mrs. Helen Dobson, 48 Holley Street
New York 19: Mr. Hans Hacker, 939 Eighth Avenue
Poughkeepsie: Mrs. John A. Wallberg, 36 Ferris Street
Poughkeepsie: Mr. John A. Wallberg, 36 Ferris Street

OHIO

Cleveland 10: Dr. Leo Stoor, 15201 St. Clair Avenue

CORRECTION

Mr. Fred Lapes, Esperance, New York given as Mr. Fred Lyon

DECEASED

Mr. Ledyard Cogswell, Jr., 75 State Street, Albany, New York (1108)

CHANGE OF ADDRESS

Mr. R. D. St. John (Sweet's Catalogue Service) to 1592 Columbus Street, Burlingame, California.